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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,377

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Juichi Kubo

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06/25/2010

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EXAMINER

MCNALLY, DANIEL

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

06/25/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/572,377	Applicant(s) KUBO ET AL.	
	Examiner DANIEL MCNALLY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune [JP61-62575A, of record, previously cited] in view of Swiggett et al. [US4693778, of record, previously cited, herein "Swiggett"] and Ikushima et al. [WO02/103202A1, newly cited, relying upon US2005/0063839 as an English equivalent, herein "Ikushima"].

Hisatsune discloses a method of applying a wire. The method comprises feeding a wire (3) to pass through an adhesive ejecting nozzle (5) having an inner diameter larger than the outer diameter of the wire (3), to obtain the wire (3) coated with the adhesive (4) on the wire surface, and forming the wiring on a surface of a substrate (1) by simultaneously ejecting the wire and the adhesive. Hisatsune disclose the wire can be any of plastic, paper and metal, but is silent as to the wire being an optical fiber. Hisatsune further discloses controlling the pressure in the nozzle to push out a constant amount of adhesive using a plunger/controller (8), and is silent as to controlling the air pressure for pushing out the adhesive.

Swiggett discloses a method for applying conductor wiring to a substrate. Swiggett discloses the conductor wiring may be wires for electrical conduction or optical

Art Unit: 1791

fiber for conducting light (column 1, lines 10-13). The method comprises feeding an optical fiber through a guide onto a substrate where it is bonded with an adhesive to form the optical wiring.

Ikushima discloses a method of delivering a fixed quantity of liquid from a nozzle. Ikushima discloses there are known alternative methods for controlling the amount of liquid that is delivered through the nozzle (paragraph 0002). One method uses a plunger type device (as is used in Hisatsune) wherein a plunger is moved to pressurize the liquid so that a desired amount of liquid is ejected from the nozzle. An alternative method uses an air type delivering device wherein air is applied at a regulated pressure to the liquid in the reservoir vessel so that a desired amount of liquid is delivered from the nozzle.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hisatsune by applying a wire that is an optical fiber as taught by Swiggett as a substitution of known wire types is well within the purview of one of ordinary skill, and to modify the method of Hisatsune by using an air pressure controller rather than the controller/plunger as taught by Ikushima as a substitution of known alternatives is well within the purview of one of ordinary skill.

With regard to claims 3 and 4, Hisatsune shows in Figure 2 that relative movement between the nozzle and the substrate is required to apply the coated wire. Hisatsune is silent as to which of the nozzle and substrate is stationary and which of the nozzle and substrate is moved. Swiggett discloses relative movement between a dispenser and a substrate can be caused by either fixing the substrate and moving the

Art Unit: 1791

dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hisatsune by moving either of the nozzle or substrate as taught by Swiggett in order to apply the wire to the substrate in a pattern.

Hisatsune discloses an apparatus capable of wiring an optical fiber. The apparatus comprises a liquid material ejecting unit (Figure 2) with a nozzle (5) having an inner diameter larger than an outer diameter of an wire (3) and allowing the wire and adhesive (4) coating to be simultaneously fed through the nozzle, a controller/plunger (8) to control pressure for pushing out the adhesive. Hisatsune is silent as to a stage for supporting the substrate onto which the wire is applied, wherein the liquid material ejecting unit and stage are movable. Hisatsune discloses a controller/plunger (8) to control pressure for pushing out the adhesive but is silent as to controlling the air pressure for pushing out the adhesive.

Swiggett discloses an apparatus for applying an optical fiber to a substrate. The apparatus comprises a wire dispensing head and a stage. The stage and dispensing head are movable relative to each other.

Ikushima discloses a device for delivering a fixed quantity of liquid from a nozzle. Ikushima discloses there are known alternative devices for controlling the amount of liquid that is delivered through the nozzle (paragraph 0002). One is a plunger type device (as is used in Hisatsune) wherein a plunger is moved to pressurize the liquid so that a desired amount of liquid is ejected from the nozzle. An alternative device is an air

Art Unit: 1791

type delivering device wherein air is applied at a regulated pressure to the liquid in the reservoir vessel so that a desired amount of liquid is delivered from the nozzle.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of Hisatsune to include a stage that is movable relative to the liquid material ejecting unit as taught by Swiggett in order to apply the optical fiber over a pattern on the surface of a substrate held by the stage, and to modify the apparatus of Hisatsune by using a air pressure controller rather than the controller/plunger as taught by Ikushima as a substitution of known alternatives is well within the purview of one of ordinary skill

With regard to claims 8 and 9, Swiggett discloses the apparatus is capable of relative movement between a dispenser and a substrate and be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16).

3. Claims 2, 10, 11, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune, Swiggett and Ikushima as applied to claims 1, 3, 4, 7, 8 and 9 above, and further in view of Keyworth et al. [US5534101, of record, previously cited, herein "Keyworth"].

Hisatsune as modified disclose a method and apparatus for applying wiring to a substrate. Applicant is referred to paragraph 2 for a detailed discussion of Hisatsune as modified.

With regard to claims 2 and 11, Hisatsune is silent as to a controller that controls the speed at which the wire is introduced. Keyworth discloses controlling the speed at

Art Unit: 1791

which the nozzle is moved relative to the substrate, which will affect the rate at which the optical fiber needs to be fed. If the nozzle is moving faster the optical fiber will also need to be fed faster and if the nozzle is moved slower the optical fiber would need to be fed slower. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus of either one of Hisatsune to include a controller for controlling the speed at which the nozzle is moved which controls the feeding speed of the wire as taught by Keyworth in order to ensure accurate placement of the optical fiber on the substrate.

With regard to claim 10, Hisatsune is silent as to including a UV lamp for capable of curing the adhesive. Keyworth disclose dispensing an adhesive coating that is UV curable and using a UV lamp to cure the adhesive (column 4, lines 1-21 and lines 38-48). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of Hisatsune by including a UV lamp to cure the adhesive as taught by Keyworth in order to quickly cure the adhesive holding the wire to the substrate.

With regard to claims 12 and 13, Hisatsune discloses a wire is passed through a storage section connected to the nozzle where the adhesive is stored. Hisatsune is silent as to the storage section being connected to an air pipe for feeding air to the liquid in the storage section. Hisatsune discloses a plunger is contacting the adhesive, and Ikushima discloses the plunger can be substituted with an air pressure controller. Keyworth discloses a device that dispenses a liquid using an air pressure controller (28) (column 4, lines 1-21). Keyworth appears to show in Figure 1 a pipe running from the

Art Unit: 1791

controller (28) to the dispenser (18). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus to comprise an air pipe as taught by Keyworth in order to supply air from the controller to the dispenser.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune, Swiggett and Ikushima as applied to claims 1, 3, 4, 7, 8 and 9 above, and further in view of Keyworth et al. Hawkins [US3742107, of record, previously cited].

Hisatsune as modified discloses a method for applying optical wiring to a substrate. Applicant is referred to paragraph 2 for a detailed discussion Hisatsune as modified. Hisatsune discloses a polymer wire can be used, and Swiggett disclose an optical fiber but is silent as to a polymer optical fiber.

Hawkins discloses a method of making an optical fiber. Hawkins discloses glass fibers are well known, however polymeric optic fibers can be used and have the added benefit of increased strength and flexibility (column 1, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hisatsune by using a polymeric optical fiber as taught by Hawkins in order to increase the strength and flexibility of the optical fiber.

5. Claims 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune, Swiggett and Ikushima as applied to claims 1, 3, 4, 7, 8 and 9 above, and further in view of Yamaguchi et al. [US20010011413, newly cited, herein "Yamaguchi"]

Hisatsune as modified disclose a method and apparatus for applying wiring to a substrate. Applicant is referred to paragraph 2 for a detailed discussion of Hisatsune as

Art Unit: 1791

modified. Hisatsune is silent as to the adhesive being UV curable or including a UV lamp for curing the adhesive.

Yamaguchi discloses a method of wiring a substrate. The method comprises using a UV curable adhesive to secure a wire to a substrate and curing the adhesive by applying UV light after the wire is applied to the substrate (paragraph 0126). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus of Hisatsune by using a UV curable adhesive and curing the adhesive by applying UV light as taught by Yamaguchi in order to quickly cure the adhesive holding the wire to the substrate.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune, Swiggett and Ikushima as applied to claims 1, 3, 4, 7, 8 and 9 above, and further in view of Inaba et al. [US2002/0112821, newly cited, herein "Inaba"].

Hisatsune as modified discloses a method for applying optical wiring to a substrate. Applicant is referred to paragraph 2 for a detailed discussion Hisatsune as modified. Hisatsune discloses a wire is passed through a storage section connected to the nozzle where the adhesive is stored. Hisatsune is silent as to the storage section being connected to an air pipe for feeding air to the liquid in the storage section. Hisatsune discloses a plunger is contacting the adhesive, and Ikushima discloses the plunger can be substituted with an air pressure controller, but Ikushima is silent as to the air pressure controller comprising a pipe connected to the dispenser.

Inaba discloses a method and apparatus for applying an adhesive. Inaba discloses a syringe (113) with a nozzle (112) for dispensing the adhesive. Inaba

Art Unit: 1791

discloses the amount of adhesive dispensed from the nozzle is determined by the air pressure supplied to the syringe. Inaba further discloses a pipe (passage 116) for supplying air from the air supply to the syringe to press out the adhesive (paragraphs 0003-0004).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus of Hisatsune by including an air pipe connected to the storage section as taught by Inaba in order to allow air pressure to force an amount of adhesive from the nozzle.

Response to Arguments

7. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues Hisatsune is not analogous prior art. Hisatsune discloses a method applying a wire to a substrate by passing a wire through a nozzle. While Hisatsune does not explicitly disclose the wire is an optical fiber, Swiggett teaches wire application devices can apply a variety of wires including optical fibers. As for the apparatus claims, the type of wire used is the material worked upon which is not limited by the method steps described in the apparatus claims. The apparatus of Hisatsune would be capable of performing the method steps disclosed in the apparatus claims. Hisatsune considered analogous art.

Applicant's arguments directed toward the modification of the Swiggett method and apparatus are moot as the rejections in view of Swiggett as the primary reference are withdrawn.

Art Unit: 1791

Applicant's arguments directed toward Hisatsune's controller not controlling the air pressure is moot as the rejection is withdrawn, and a new rejection in view of newly cited Ikushima is made. Ikushima discloses an alternative device to the plunger controller of Hisatsune that uses air pressure to control the dispensing of the liquid.

Limitations of new claims 12 and 13 are taught by either one of Keyworth or newly cited Inaba.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/
Examiner, Art Unit 1791

/John L. Goff/
Primary Examiner, Art Unit 1791

DPM
June 19, 2010